Attachment No. 4

ANALYTICAL REPORT

ARSENAL BUSINESS CENTER
TSCA
Lab Request # REQ98018

January 6, 1998

January 6, 1998

ANALYTICAL RESULTS: ARSENAL BUSINESS CENTER [REQ98018]

Dear Jerry Crutchley (3ES13),

Enclosed is our analytical report for the above case. It is organized into several sections: Analytical Request and Sample Descriptions, Organic, Inorganic, and Microbiological Results. All data were peer reviewed.

Analytical Request and Sample Descriptions: (General).

Each laboratory assigned number, station, description, matrix, sample date and locational data is reported. A table summarizes the tests assigned to each sample. A glossary and qualifier code definition is provided.

Inorganic Results:

For requests assigned inorganic tests, results are grouped by service group, e.g., Metals. Sample results are reported; non-detects are provided with the actual quantitation limit. Method description and quality control protocols are described in analyst narratives.

Organic Results:

For requests assigned organic tests, results are grouped by service group, e.g., Volatile Organic Compounds. Only detected analytes are reported. Nominal Quantitation Limit (NQL) tables are provided for each service group. Specific information for the calculation of Actual Quantitation Limits (AQL) achieved for a given sample is included. Quality control values are provided in summary tables with acceptance criteria. Method description and quality control protocols are described in analyst narratives.

Microbiological Results:

For requests assigned microbiological tests, sample results and quality control values are incorporated into a single table. Method description and quality control protocols are described in analyst narratives.

If you have any questions we may be reached at 410-573-2600.

Approval for Release:

Susan Warner

U.S. EPA Region III

Office of Analytical Services

and Quality Assurance

Annapolis, Maryland

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

Section: GENERAL

Page: B1

SAMPLE DESCRIPTIONS

End Collection Date Time Latitude Longitude Sample # Station, Description Matrix Type 97102427 STA 247-1, Bldg. 247-1 Waste Oils GRAB 10/23/97 13:30 GRAB , 10/23/97 13:40 97102428 STA 247-2, Bldg. 247-2 Waste Oils

Page: C1

Section: GENERAL

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

TESTS REQUESTED

Organic Test Assigned		Sample No. 971024-													
	27	28								٠.					
IR Qualitative Identification	х	2	(
PCBs by Gas Chromatography	Х	2	(l					L	

Section: General Page: D1

QUALIFIER CODE AND GLOSSARY DEFINITIONS

Qualifier Codes:

<	==	Sample value is below the quantitation limit. Quantitation limit reported.
= .</td <td>=</td> <td>Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value</td>	=	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value
		reported.
>	=	Sample value is above the quantitation range.
Α	=	Quality control value is outside acceptance limits.
В	=	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
С	=	See report narrative for analyst's observations concerning this result.
D	=	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
E	=	Value exceeds a theoretically greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical
		techniques and is not statistically significant.
1	= .	An interference exists which masks true response. See report narrative for explanation.
J	=	Analyte present. Reported value is estimated; concentration is outside the range for accurate quantitation.
K	=	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
L	=	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N	=	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling
		efforts.
NA	***	Analysis was not requested.
Q ·	=	No analytical results. See report for explanation.
R	=	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T	=	Tentatively Identified Compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and
		quantitate the compound. The reported concentration is an estimate.
TD	=	Spike recovery too dilute for accurate quantitation.
UJ	=	Not detected. Quantitation limit is estimated.
UL	=	Not detected. Quantitation limit is probably higher.
Glossary:		
()	=	Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).
ίί	==	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).

[]	==	Numbers in brackets are matrix spike recoveries (e.g. pre-digestion spikes).
MS/MSD	=	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analyses.
MSA	=	Method of Standard Additions
RPD	=	Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

ORGANIC ANALYTICAL REPORT

ARSENAL BUSINESS CENTER
TSCA
Lab Request # REQ98018

U.S. EPA Region III
Office of Analytical Services
and Quality Assurance

Section: ORGANIC

Page: A1

and Quality Assurance Annapolis, Maryland

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

ORGANIC ANALYTICAL SAMPLE RESULTS

Sample Number:

97102427

97102428

ANALYTES

SAMPLE

SAMPLE

NOL Factor:

1

IR Qualitative Identification

Units: mg/Kg

mg/Kg

Infrared Scan

C

Section: ORGANIC

Page: B1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: PETROLEUM

SURROGATES	Surrogate Limits	97102427 SAMPLE	97102428 SAMPLE
PCBs by Gas Chromatography	Range		*
Decachlorobiphenyl	(60-150)	74	63
Tetrachloro-M-Xylene	(60-150)	55 A	59 A

Section: ORGANIC

Page: C1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

ORGANIC QUALITY CONTROL (MATRIX SPIKE RECOVERIES)

Matrix: PETROLEUM	971	02428			
	Spike Re	covery	Recovery		RPD
ANALYTES	MS	MSD	Limits	RPD	Limits
PCBs by Gas Chromatography	*	*	Range	RPD	Limit
Aroclor 1260	103	97		6	

Section: ORGANIC

Page: D1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98018

LABORATORY REAGENT BLANK RESULTS

Method: PCBs by Gas Chromatography

Run: OA971229 7 LRB

SURROGATES	1	NQL	Factor	ъ	Rec
Decachlorobiphenyl			1	7	1
Tetrachloro-M-Xylene			1	9	7

Office of Analytical Services and Quality Assurance Pesticide and PCB Analysis Nominal Quantitation Limits (NQL)

Units: Petroleum = mg/kg NPTC = Non-Priority Pollutant Target Compound

Actual Quantitation Limit = (NQL Factor) X NQL

CAS	Pesticide	NQL
319-84-6	Alpha-BHC	0.05
319-85-7	Beta-BHC	0.05
319-86-8	Delta-BHC	0.05
58-89-8	Gamma-BHC	0.05
76-44-8	Heptachlor	0.05
309-00-2	Aldrin	0.05
1024-57-3	Heptachlor Epoxide	0.05
959-98-8	Endosulfan I	0.05
60-57-1	Dieldrin	0.10
72-55-9	4,4'-DDE	0.10
72-20-8	Endrin	0.10
33213-65-9	Endosulfan II	0.10
72-54-8	4,4'-DDD	0.10
1031-07-8	Endosulfan Sulfate	0.10
50-29-3	4,4'-DDT	0.10
7421-93-4	Endrin Aldehyde	0.10
53494-70-5	Endrin Ketone NPTC	0.10
72-43-5	Methoxychlor NPTC	0.50
5103-71-9	Alpha-Chlordane	0.05
5103-74-2	Gamma-Chlordane	0.05
57-74-9	Chlordane	1.0
8001-35-2	Toxaphene	5.0

CAS	PCB	NQL
12674-11-2	Aroclor-1016	1.0
1104-28-2	Aroclor-1221	1.0
11141-16-5	Aroclor-1232	1.0
53469-21-9	Aroclor-1242	1.0
12672-29-6	Aroclor-1248	1.0
11097-69-1	Aroclor-1254	1.0
11096-82-5	Aroclor-1260	1.0

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Section: Organics

Page: 1

PCB Analysis By Gas Chromatography

Analyst:

Arnold Turner Chemist

Method:

Two oil samples from ARSENAL BUSINESS CENTER (REQ98018) were analyzed for polychlorinated biphenyls by capillary column gas chromatography. All analyses were performed according to SOP R3-QA207.0. This SOP is a consolidated method derived from EPA methods SDWA 508, NPDES 608, RCRA 8081 & 8082, and the Superfund CLP Statement of Work. The samples were collected on October 23, 1997, extracted on December 30, 1997, using Method 3580A (Waste Dilution), and analyzed on December 30 - December 31, 1997. The samples were analyzed beyond the RCRA holding time of 14 days. All oil results are reported on a **WET WEIGHT** basis.

Quality Control:

Two of the four surrogate recoveries were outside the acceptance limit criteria (60-150% recovery) and were flagged with an "A" qualifier code. Both matrix spike recoveries were within typical acceptance limits established by the RCRA program (80-120%). The matrix spike relative percent difference (RPD) value of 6 was well below 50 (a typical value for pesticides).

No polychlorinated biphenyls were detected in the two samples. The nominal quantitation limit factors for both of these samples was 30.3.

Section: Organics

Page: 2

Infrared Identification

Analyst:

Sue Greco Chemist

Method:

Samples from Arsenal Business Center, REQ98018, were analyzed for component identification using FTIR scans combined with library search programs as well as hard-copy reference spectra.

97102427: Top layer of bottle: Hydrocarbon oil spectrum containing N-H, acidic C=O, C=C or C=O (amide), possible halogen; no SO4, P cpds.

Bottom layer of bottle: Water.

Sludge on bottom of bottle: Same as top layer plus dirt.

97102428: Top layer of bottle: Hydrocarbon oil spectrum containing N-H, ester C=O, C=C or C=O (amide), aromatic; no SO4, P cpds., acids.

Bottom layer of bottle: Water.

No sludge.

Spectra of both samples match some of the known gear oil/hydraulic oil spectra in the Nicolet Oil Spectra Library (70 - 87% of the absorbances, good but not great), but there is no one outstanding match.

Region III, Central Regional Laboratory Annapolis, Maryland

HAZARD AND RISK EXPOSURE DATA SHEET LEVELS OF PERSONAL PROTECTION DURING SAMPLING

BACKGROUND

Under the authority of Section 104 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund) of 1980, Section 311 of the Clean Water Act, and Subtitle I of the Resource Conservation and Recovery Act (RCRA), EPA has been delegated the responsibility to undertake response actions with respect to the release or potential release of oil, petroleum, or hazardous substances that pose a substantial threat to human health or welfare, or the environment.

GENERAL

This form is to be used when collecting <u>Environmental Samples</u> (i.e. streams, farm ponds, wells, soils etc.) and for <u>Hazardous Samples</u> (i.e. drums, storage tanks, lagoons, leachates, hazardous waste sites). This information is intended for use as a guide for the safe handling of these laboratory samples in accordance with EPA and OSHA regulations. The sample classification(s) and levels of personal protection used by the sampler in all situations will enable the analyst to be better aware of potential exposure to substances in air, splashes of liquids, or other direct contact with material due to work being done.

DEGREE O	F PROTE	CTION .
Le Le Le Le	vel B:	Fully encapsulated suit, respirator self-contained (Tank type) Highest level of respiratory protection but lesser level of skin protection needed. Chemical suit, respirator self-contained (Tank type) Lesser level of respiratory protection than Level B. Skin protection criteria are similar to Level B. Chemical suit, cannister respirator/cartridge
CLASSIFI	ED FIEL	D SAMPLES
See	Site No Sta No Field j (mu: Sample:	wironmentalHazardousComb. (Env. & Haz.)Radioactive ame: ARSENAL BUSINESS (ENTER_ Sampling Date: 10-23-97 WB , ABC-15, ABC-16, ABC-17, ABC-18,, 2471, 2472,, pH:, *7.0 *7.0 ,, st be taken prior to submission of aqueous samples) r: GERARD (Rutch ley Work Phone Number: 410) 573-2780 al observations at time of sampling (surroundings): #\$ 247-1 4 247-7, taken from unmarked dums (level c)
	* fie	collection observations (physical sample, odors etc.)

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Attachment No. 3

ANALYTICAL REPORT

ARSENAL BUSINESS CENTER
TSCA
Lab Request # REQ98017

December 16, 1997

December 16, 1997

ANALYTICAL RESULTS: ARSENAL BUSINESS CENTER [REQ98017]

Dear Jerry Crutchley (3ES13),

Enclosed is our analytical report for the above case. It is organized into several sections: Analytical Request and Sample Descriptions, Organic, Inorganic, and Microbiological Results. All data were peer reviewed.

Analytical Request and Sample Descriptions: (General)

Each laboratory assigned number, station, description, matrix, sample date and locational data is reported. A table summarizes the tests assigned to each sample. A glossary and qualifier code definition is provided.

Inorganic Results:

For requests assigned inorganic tests, results are grouped by service group, e.g., Metals. Sample results are reported; non-detects are provided with the actual quantitation limit. Method description and quality control protocols are described in analyst narratives.

Organic Results:

For requests assigned organic tests, results are grouped by service group, e.g., Volatile Organic Compounds. Only detected analytes are reported. Nominal Quantitation Limit (NQL) tables are provided for each service group. Specific information for the calculation of Actual Quantitation Limits (AQL) achieved for a given sample is included. Quality control values are provided in summary tables with acceptance criteria. Method description and quality control protocols are described in analyst narratives.

Microbiological Results:

For requests assigned microbiological tests, sample results and quality control values are incorporated into a single table. Method description and quality control protocols are described in analyst narratives.

If you have any questions we may be reached at 410-573-2600.

Approval for Release:

Susan Warner

Site contact: Gerard Crutchley (ANNAPOLIS OPERATIONS SECTION)

Jerry Crutchley (3ES13)

U.S. EPA Region III Office of Analytical Services and Quality Assurance

Page: B1

Section: GENERAL

Annapolis, Maryland

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98017

SAMPLE DESCRIPTIONS

								End Collection		
Samp	le_#	Station, Description			Matrix		Type	Date Time	Latitude	Longitude
9710	2422	STA WB, Wipe Blank	•		Wipe(s)		GRAB	10/23/97 09:54		
9710	2423	STA ABC-15, Bldg. 230		į	Wipe(s)		GRAB	10/23/97 10:00		
9710	2424	STA ABC-16, Bldg. 126	•		Wipe(s)		GRAB	10/23/97 10:17		
9710	2425	STA ABC-17, Bldg. 150			Wipe(s)		GRAB	10/23/97 10:35		
9710	2426	STA ABC-18, Bldg. 301A			Wipe(s)		GRAB	10/23/97 10:55		

Section: GENERAL

Page: C1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98017

TESTS REQUESTED

Organic Test Assigned	Sar	nple	No.	9710	024-											
	22	23	24	25	26						- 1	14	1,2			
PCBs by Gas Chromatography	х	х	x	х	х					. •						

Section: General Page: D1

QUALIFIER CODE AND GLOSSARY DEFINITIONS

Qualifier Co	odes:	
< .	=	Sample value is below the quantitation limit. Quantitation limit reported.
=</td <td>=</td> <td>Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value</td>	=	Reported value is estimated. Sample was analyzed in duplicate, one value is equal to or above the quantitation limit and one below. Average of quantitation limit and detected value
•		reported.
>	= .	Sample value is above the quantitation range.
Α	=	Quality control value is outside acceptance limits.
В	= .	Not detected substantially above (10 times) the level reported in the laboratory or field blanks (includes field, trip, rinsate, and equipment blanks).
Č	=	See report narrative for analyst's observations concerning this result.
D	=	Sample and duplicate values are below the quantitation limit. Quantitation limit reported.
Ē	=	Value exceeds a theoretically greater value (e.g. dissolved > total, orthophosphate > total phosphorus). However, the difference is within the expected precision of the analytical
_		techniques and is not statistically significant.
Ī	=	An interference exists which masks true response. See report narrative for explanation.
i	=	Analyte present. Reported value is estimated; concentration is outside the range for accurate quantitation.
ĸ	=	Analyte present. Reported value may be biased high. Actual value is expected to be lower.
i.	=	Analyte present. Reported value may be biased low. Actual value is expected to be higher.
N	=	Presumptive evidence indicates the presence of the compound. Special methods and/or method modifications may be needed to confirm its presence or absence in future sampling
••		efforts.
NA	=	Analysis was not requested.
Q	=	No analytical results. See report for explanation.
R	=	Unreliable results. Analyte may or may not be present in the sample. Supporting data is necessary to confirm results.
T	=	Tentatively Identified Compound. Identified as a result of a library search using the EPA/NIH Mass Spectral Library. Authentic standards were not available to properly identify and
•		quantitate the compound The reported concentration is an estimate.
TD	=	Spike recovery too dilute for accurate quantitation.
ÜĴ	=	Not detected. Quantitation limit is estimated.
UL	=	Not detected. Quantitation limit is estimated. Not detected. Quantitation limit is probably higher.
OL		Tot detected. Quantization limit is proceed, inguis-
Glossary:		
()	=	Numbers in parentheses are analytical spike recoveries (e.g. post-digestion spikes).
()	=	Numbers in brackets are matrix spike recoveries (e.g. post-digestion spikes).
MS/MSD	_	Matrix spike/matrix spike duplicate; a known increment of target analyte made to a sample before preparation or analyses.
IVIO/IVIOD	_	Mattix Spike matrix spike duplicate, a known increment of target analyte made to a sample before preparation of analyses.

 $RPD = \frac{|Replicate1 - Replicate2|}{(Replicate1 + Replicate2)/2} \times 100$

Relative Percent Difference; the results for duplicate analyses are presented as the mean and the relative percent difference.

MSA

RPD

Method of Standard Additions

ORGANIC ANALYTICAL REPORT

ARSENAL BUSINESS CENTER
TSCA

Lab Request # REQ98017

Section: ORGANIC

Page: B1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98017

ORGANIC QUALITY CONTROL (SURROGATE RECOVERIES)

Matrix: WIPES

SURROGATES	Surrogate _Limits_	97102422 SAMPLE	97102423 SAMPLE	97102424 SAMPLE	97102425 SAMPLE	97102426 SAMPLE	
PCBs by Gas Chromatography	Range	*	*	*	*	8	
Decachlorobiphenyl	(0- 0)	117	TD	TD	TD	TD	
Tetrachloro-M-Xylene	(0- 0)	110	TD	TD	TD	TD	

Section: ORGANIC

Page: C1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA

Lab Request #: REQ98017

ORGANIC QUALITY CONTROL (MATRIX SPIKE RECOVERIES)

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Section: ORGANIC Page: D1

Facility: ARSENAL BUSINESS CENTER

Program: TSCA Lab Request #: REQ98017

LABORATORY REAGENT BLANK RESULTS

Method: PCBs by Gas Chromatography

Run: OA971210 6 LRB

SURROGATES		NQL Factor	% Rec
Decachlorobiphenyl		1	116
Tetrachloro-M-Xylene		1	104

Office of Analytical Services and Quality Assurance Pesticide and PCB Analysis Nominal Quantitation Limits (NQL)

Units: Wipes = ug/wipe NPTC = Non-Priority Pollutant Target Compound

Actual Quantitation Limit = (NQL Factor) X NQL

CAS	Pesticide	NQL
319-84-6	Alpha-BHC	0.05
319-85-7	Beta-BHC	0.05
319-86-8	Delta-BHC -	0.05
58-89-8	Gamma-BHC	0.05
76-44-8	Heptachlor	0.05
309-00-2	Aldrin	0.05
1024-57-3	Heptachlor Epoxide	0.05
959-98-8	Endosulfan I	0.05
60-57-1	Dieldrin	0.10
72-55-9	4,4'-DDE	0.10
72-20-8	Endrin	0.10
33213-65-9	Endosulfan II	0.10
72-54-8	4,4'-DDD	0.10
1031-07-8	Endosulfan Sulfate	0.10
50-29-3	4,4'-DDT	0.10
7421-93-4	Endrin Aldehyde	0.10
53494-70-5	Endrin Ketone NPTC	0.10
72-43-5	Methoxychlor NPTC	0.50
5103-71-9	Alpha-Chlordane	0.05
5103-74-2	Gamma-Chlordane	0.05
57-74-9	Chlordane	1.0
8001-35-2	Toxaphene	5.0

CAS	PCB	NQL
12674-11-2	Aroclor-1016	1.0
1104-28-2	Aroclor-1221	1.0
11141-16-5	Aroclor-1232	1.0
53469-21-9	Aroclor-1242	1.0
12672-29-6	Aroclor-1248	1.0
11097-69-1	Aroclor-1254	1.0
11096-82-5	Aroclor-1260	1.0

The "Nominal Quantitation Limit" listed for each target compound is based on the Superfund CLP Protocol. The Actual Quantitation Limits are related to the NQLs by the NQL Factor. This NQL factor reflects procedural steps, e.g., extract dilution, which influence quantitation limits.

Section: Organics

Page: 1

PCB Analysis By GC

Analysts:

Arnold Turner

Gretchen Klebasko

Charles Weisberg

Chemist

Environmental Scientist

Chemist

Method:

Five wipe samples from Arsenal Business Center were analyzed for polychlorinated biphenyls by capillary column gas chromatography. The samples were collected on October 23, 1997, extracted on October 30, 1997, and analyzed on November 11, 1997 through December 11, 1997, using SOP R3-QA207.0 (a consolidated method derived from EPA methods SDWA 508, NPDES 608, RCRA 8080A and the Superfund CLP Statement of Work).

Quality Control:

Two of ten surrogate recoveries were within the acceptance limit criteria (60-150% recovery). Eight surrogate recoveries were flagged with a "TD" qualifier code, because the surrogates were not detectable due to high dilutions of the samples. A matrix spike and matrix spike duplicate were not analyzed due to a lack of material submitted for these QC samples.

Results:

The sample results converted to "ug/wipe" units are as follows:

	97102422	97102423	97102424	97102425	97102426
NQL Factor	1	50	20	1500	10
Aroclor 1260 (ug/wipe)	Not detected	2,014	492	112,000 J	5.26

This table replaces section "A1" of the organic analytical report.

Office of Enforcement														Œ	69	1801	+ (EVA	REGION 9 Curtis Bldg., 6th & Walnut Sts.				
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Gerard Cruthley									OF CON-										REM	REMARKS			
STA. NO. DATE TIME OF STATION LOCATION							TAINERS	1	X														
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